

In the Claims

1-57 (canceled).

58 (new). A method for treating a carcinoma or viral infection in a patient, comprising administering to a patient in need thereof an amount of a Mycobacterium antigen and a $\gamma\delta$ T cell activator effective to treat said carcinoma or viral infection.

59 (new). The method according to claim 58, wherein said carcinoma or viral infection is superficial basal cell carcinoma, HPV infection or malignant melanoma.

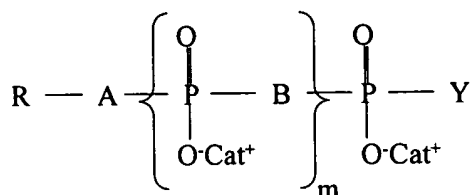
60 (new). The method according to claim 58, wherein said Mycobacterium antigen is an attenuated Mycobacterium strain.

61 (new). The method according to claim 58, wherein said Mycobacterium antigen and said $\gamma\delta$ T cell activator are administered simultaneously or separately and are administered by the same or different routes.

62 (new). The method according to claim 58, wherein said Mycobacterium antigen is administered intravesicularly into the bladder.

63 (new). The method according to claim 61, wherein said Mycobacterium antigen is administered intravesicularly into the bladder and said Mycobacterium antigen is administered simultaneously or separately with said $\gamma\delta$ T cell activator.

64 (new). The method according to claim 58, wherein said $\gamma\delta$ T cell activator is a compound of formula (I) :



Formula (I)

wherein Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including proton);

m is an integer from 1 to 3;

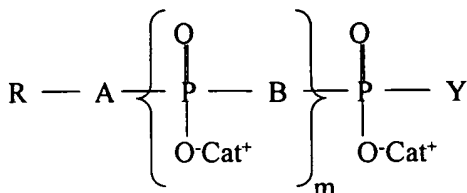
B is O, NH, or any group capable to be hydrolyzed;

Y = O⁻Cat⁺, a C₁-C₃ alkyl group, a group -A-R, or a radical selected from the group consisting of a nucleoside, an oligonucleotide, a nucleic acid, an amino acid, a peptide, a protein, a monosaccharide, an oligosaccharide, a polysaccharide, a fatty acid, a simple lipid, a complex lipid, a folic acid, a tetrahydrofolic acid, a phosphoric acid, an inositol, a vitamin, a co-enzyme, a flavonoid, an aldehyde, an epoxyde and a halohydrin;

A is O, NH, CHF, CF₂ or CH₂; and,

R is a linear, branched, or cyclic, aromatic or not, saturated or unsaturated, C₁-C₅₀ hydrocarbon group, optionally interrupted by at least one heteroatom, wherein said hydrocarbon group comprises an alkyl, an alkylenyl, or an alkynyl, preferably an alkyl or an alkylene, which can be substituted by one or several substituents selected from the group consisting of : an alkyl, an alkylenyl, an alkynyl, an epoxyalkyl, an aryl, a heterocycle, an alkoxy, an acyl, an alcohol, a carboxylic group (-COOH), an ester, an amine, an amino group (-NH₂), an amide (-CONH₂), an imine, a nitrile, a hydroxyl (-OH), a aldehyde group (-CHO), an halogen, an halogenoalkyl, a thiol (-SH), a thioalkyl, a sulfone, a sulfoxide, and a combination thereof.

65 (new). The method according to claim 63, wherein said γδT cell activator is a compound of formula (I) :



Formula (I)

wherein Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including proton);

m is an integer from 1 to 3;

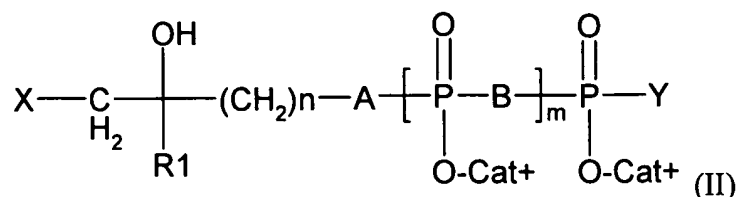
B is O, NH, or any group capable to be hydrolyzed;

Y = O⁻Cat⁺, a C₁-C₃ alkyl group, a group -A-R, or a radical selected from the group consisting of a nucleoside, an oligonucleotide, a nucleic acid, an amino acid, a peptide, a protein, a monosaccharide, an oligosaccharide, a polysaccharide, a fatty acid, a simple lipid, a complex lipid, a folic acid, a tetrahydrofolic acid, a phosphoric acid, an inositol, a vitamin, a co-enzyme, a flavonoid, an aldehyde, an epoxyde and a halohydrin;

A is O, NH, CHF, CF₂ or CH₂; and,

R is a linear, branched, or cyclic, aromatic or not, saturated or unsaturated, C₁-C₅₀ hydrocarbon group, optionally interrupted by at least one heteroatom, wherein said hydrocarbon group comprises an alkyl, an alkylenyl, or an alkynyl, preferably an alkyl or an alkylene, which can be substituted by one or several substituents selected from the group consisting of : an alkyl, an alkylenyl, an alkynyl, an epoxyalkyl, an aryl, an heterocycle, an alkoxy, an acyl, an alcohol, a carboxylic group (-COOH), an ester, an amine, an amino group (-NH₂), an amide (-CONH₂), an imine, a nitrile, an hydroxyl (-OH), a aldehyde group (-CHO), an halogen, an halogenoalkyl, a thiol (-SH), a thioalkyl, a sulfone, a sulfoxide, and a combination thereof.

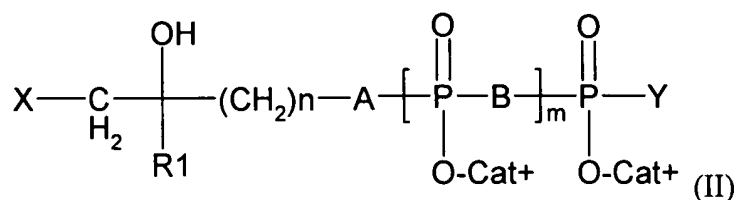
66 (new). The method according to claim 58, where said γδT cell activator is a compound of formula (II):



in which X is an halogen (preferably selected from I, Br and Cl), B is O or NH, m is an integer from 1 to 3, R1 is a methyl or ethyl group, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), and n is an integer from 2 to 20, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

67 (new). The method according to claim 66, wherein the compound of formula (II) is selected from the group consisting of BrHPP, CBrHPP and epoxPP.

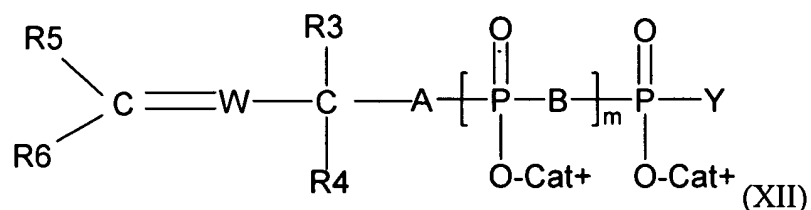
68 (new). The method according to claim 63, wherein said $\gamma\delta$ T cell activator is a compound of formula (II):



in which X is an halogen (preferably selected from I, Br and Cl), B is O or NH, m is an integer from 1 to 3, R1 is a methyl or ethyl group, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), and n is an integer from 2 to 20, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

69 (new). The method according to claim 68, wherein the compound of formula (II) is selected from the group consisting of BrHPP, CBrHPP and epoxPP.

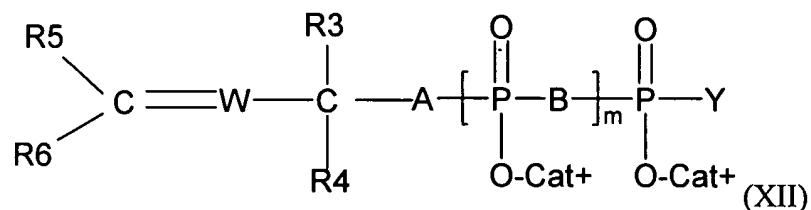
70 (new). The method according to claim 58, wherein said $\gamma\delta$ T cell activator is a compound of formula (XII):



in which R₃, R₄, and R₅, identical or different, are a hydrogen or (C₁-C₃)alkyl group, W is -CH- or -N-, R₆ is an (C₂-C₃)acyl, an aldehyde, an (C₁-C₃)alcohol, or an (C₂-C₃)ester, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), B is O or NH, m is an integer from 1 to 3, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

71 (new). The method according to claim 70, wherein the compound of formula (XII) is HDMAPP or CHDMAPP.

72 (new). The method according to claim 63, wherein said $\gamma\delta$ T cell activator is a compound of formula (XII):



in which R₃, R₄, and R₅, identical or different, are a hydrogen or (C₁-C₃)alkyl group, W is -CH- or -N-, R₆ is an (C₂-C₃)acyl, an aldehyde, an (C₁-C₃)alcohol, or an (C₂-C₃)ester, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), B is O or NH, m is an integer from 1 to 3, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

73 (new). The method according to claim 72, wherein the compound of formula (XII) is HDMAPP or CHDMAPP.

74 (new). A method for treating a disease comprising in a subject, comprising:
(a) administering to said subject a $\gamma\delta$ T cell activator compound; and

(b) administering to a subject locally at a site of disease an immunomodulatory composition (IMC) or immunogenic composition (IC).

75 (new). The method according to claim 74, wherein the IC or IMC is a Mycobacterium antigen.

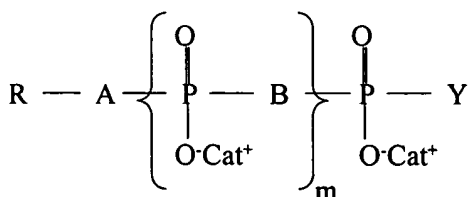
76 (new). The method according to claim 75, wherein said Mycobacterium antigen is an attenuated Mycobacterium strain.

77 (new). The method according to claim 75, wherein said Mycobacterium antigen and said $\gamma\delta$ T cell activator are administered simultaneously or separately and are administered by the same or different routes.

78 (new). The method according to claim 75, wherein said Mycobacterium antigen is administered intravesicularly into the bladder.

79 (new). The method according to claim 75, wherein said Mycobacterium antigen is administered intravesicularly into the bladder and said Mycobacterium antigen is administered simultaneously or separately with said $\gamma\delta$ T cell activator.

80 (new). The method according to claim 74, wherein said $\gamma\delta$ T cell activator is a compound of formula (I) :



Formula (I)

wherein Cat^+ represents one (or several, identical or different) organic or mineral cation(s) (including proton);

m is an integer from 1 to 3;

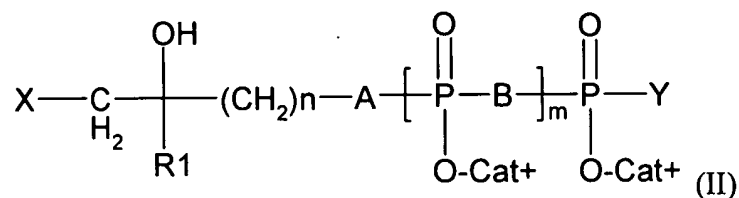
B is O, NH, or any group capable to be hydrolyzed;

Y = O⁻Cat⁺, a C₁-C₃ alkyl group, a group -A-R, or a radical selected from the group consisting of a nucleoside, an oligonucleotide, a nucleic acid, an amino acid, a peptide, a protein, a monosaccharide, an oligosaccharide, a polysaccharide, a fatty acid, a simple lipid, a complex lipid, a folic acid, a tetrahydrofolic acid, a phosphoric acid, an inositol, a vitamin, a co-enzyme, a flavonoid, an aldehyde, an epoxyde and a halohydrin;

A is O, NH, CHF, CF₂ or CH₂; and,

R is a linear, branched, or cyclic, aromatic or not, saturated or unsaturated, C₁-C₅₀ hydrocarbon group, optionally interrupted by at least one heteroatom, wherein said hydrocarbon group comprises an alkyl, an alkylenyl, or an alkynyl, preferably an alkyl or an alkylene, which can be substituted by one or several substituents selected from the group consisting of : an alkyl, an alkylenyl, an alkynyl, an epoxyalkyl, an aryl, a heterocycle, an alkoxy, an acyl, an alcohol, a carboxylic group (-COOH), an ester, an amine, an amino group (-NH₂), an amide (-CONH₂), an imine, a nitrile, an hydroxyl (-OH), a aldehyde group (-CHO), an halogen, an halogenoalkyl, a thiol (-SH), a thioalkyl, a sulfone, a sulfoxide, and a combination thereof.

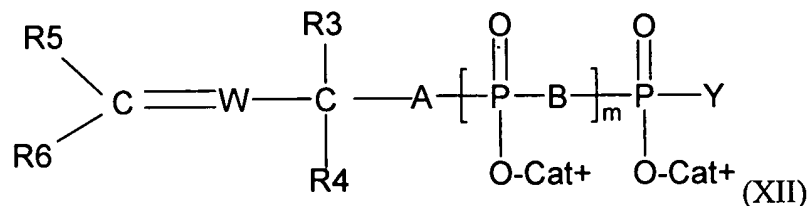
81 (new). The method according to claim 74, wherein said $\gamma\delta$ T cell activator is a compound of formula (II):



in which X is a halogen (preferably selected from I, Br and Cl), B is O or NH, m is an integer from 1 to 3, R1 is a methyl or ethyl group, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), and n is an integer from 2 to 20, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

82 (new). The method according to claim 81, wherein the compound of formula (II) is selected from the group consisting of BrHPP, CBrHPP and epoxPP.

83 (new). The method according to claim 74, where said $\gamma\delta$ T cell activator is a compound of formula (XII):



in which R₃, R₄, and R₅, identical or different, are a hydrogen or (C₁-C₃)alkyl group, W is -CH- or -N-, R₆ is an (C₂-C₃)acyl, an aldehyde, an (C₁-C₃)alcohol, or an (C₂-C₃)ester, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), B is O or NH, m is an integer from 1 to 3, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

84 (new). The method according to claim 83, wherein the compound of formula (XII) is HDMAPP or CHDMAPP.

85 (new). The method according to claim 74, wherein:

- a) the IMC comprises:
 - i) a compound which is an agonist of a toll-like receptor (TLR);
 - ii) a compound which is an agonist of a toll-like receptor (TLR) selected from the group consisting of TLR2, TLR3, TLR4, TLR6, TLR7, TLR8, TLR9 and TLR10;
 - iii) a cytokine;
 - iv) a cytokine is selected from the group consisting of IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-15, IL-18 and IL-21;
 - v) a compound which is an imidazoquinoline compound or analog or derivative thereof; or
 - vi) a CpG nucleic acid, or analog or derivative thereof; or

- b) the IC comprises a cancer antigen or a bacterial antigen.

86 (new). The method according to claim 74, wherein said medicament is for the treatment of superficial basal cell carcinoma, HPV infection or malignant melanoma.

87 (new). The method according to claim 80, wherein:

- a) the IMC comprises:
- i) a compound which is an agonist of a toll-like receptor (TLR);
 - ii) a compound which is an agonist of a toll-like receptor (TLR) selected from the group consisting of TLR2, TLR3, TLR4, TLR6, TLR7, TLR8, TLR9 and TLR10;
 - iii) a cytokine;
 - iv) a cytokine is selected from the group consisting of IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-15, IL-18 and IL-21;
 - v) a compound which is an imidazoquinoline compound or analog or derivative thereof; or
 - vi) a CpG nucleic acid, or analog or derivative thereof; or
- b) the IC comprises a cancer antigen or a bacterial antigen.

88 (new). The method according to claim 81, wherein:

- a) the IMC comprises:
- i) a compound which is an agonist of a toll-like receptor (TLR);
 - ii) a compound which is an agonist of a toll-like receptor (TLR) selected from the group consisting of TLR2, TLR3, TLR4, TLR6, TLR7, TLR8, TLR9 and TLR10;
 - iii) a cytokine;
 - iv) a cytokine is selected from the group consisting of IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-15, IL-18 and IL-21;

- v) a compound which is an imidazoquinoline compound or analog or derivative thereof; or
- vi) a CpG nucleic acid, or analog or derivative thereof; or
- b) the IC comprises a cancer antigen or a bacterial antigen.

89 (new). The method according to claim 83, wherein:

- a) the IMC comprises:
 - i) a compound which is an agonist of a toll-like receptor (TLR);
 - ii) a compound which is an agonist of a toll-like receptor (TLR) selected from the group consisting of TLR2, TLR3, TLR4, TLR6, TLR7, TLR8, TLR9 and TLR10;
 - iii) a cytokine;
 - iv) a cytokine is selected from the group consisting of IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-15, IL-18 and IL-21;
 - v) a compound which is an imidazoquinoline compound or analog or derivative thereof; or
 - vi) a CpG nucleic acid, or analog or derivative thereof; or
- b) the IC comprises a cancer antigen or a bacterial antigen.

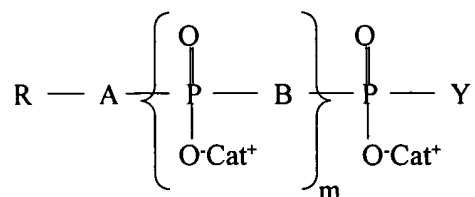
90 (new). An article of manufacture comprising:

- a) a pharmaceutical composition comprising a Mycobacterium antigen and a $\gamma\delta$ T cell activator at an effective dose to treat a carcinoma or viral infection;
- b) a kit comprising a pharmaceutical composition comprising an IC or IMC and a pharmaceutical composition comprising a $\gamma\delta$ T cell activator, said compositions at effective doses to treat a carcinoma or viral infection when used together in combination therapy and wherein the IC or IMC is provided in a form suitable for local administration to a site of disease; or
- c) a kit comprising a pharmaceutical composition comprising a Mycobacterium antigen and a pharmaceutical composition comprising a $\gamma\delta$ T cell activator, said compositions

at effective doses to treat a carcinoma or viral infection when used together in combination therapy and wherein the IC or IMC is provided in a form suitable for local administration to a site of disease.

91 (new). The article of manufacture according to claim 90, wherein said Mycobacterium antigen is an attenuated Mycobacterium strain.

92 (new). The article of manufacture according to claim 90, wherein said $\gamma\delta$ T cell activator is a compound of formula (I) :



Formula (I)

wherein Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including proton);

m is an integer from 1 to 3;

B is O, NH, or any group capable to be hydrolyzed;

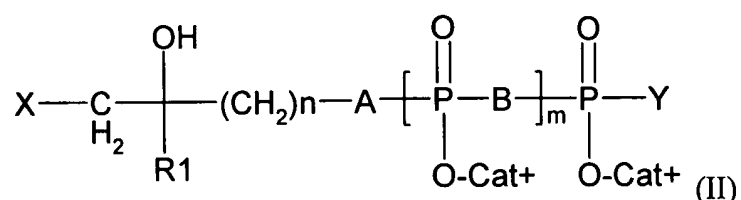
Y = O⁻Cat⁺, a C₁-C₃ alkyl group, a group -A-R, or a radical selected from the group consisting of a nucleoside, an oligonucleotide, a nucleic acid, an amino acid, a peptide, a protein, a monosaccharide, an oligosaccharide, a polysaccharide, a fatty acid, a simple lipid, a complex lipid, a folic acid, a tetrahydrofolic acid, a phosphoric acid, an inositol, a vitamin, a co-enzyme, a flavonoid, an aldehyde, an epoxyde and a halohydrin;

A is O, NH, CHF, CF₂ or CH₂; and,

R is a linear, branched, or cyclic, aromatic or not, saturated or unsaturated, C₁-C₅₀ hydrocarbon group, optionally interrupted by at least one heteroatom, wherein said hydrocarbon group comprises an alkyl, an alkylenyl, or an alkynyl, preferably an alkyl or an alkylene, which can be substituted by one or several substituents selected from the group consisting of : an alkyl, an alkylenyl, an alkynyl, an epoxyalkyl, an aryl, an heterocycle, an alkoxy, an acyl, an alcohol, a carboxylic group (-COOH),

an ester, an amine, an amino group (-NH₂), an amide (-CONH₂), an imine, a nitrile, an hydroxyl (-OH), an aldehyde group (-CHO), an halogen, an halogenoalkyl, a thiol (-SH), a thioalkyl, a sulfone, a sulfoxide, and a combination thereof.

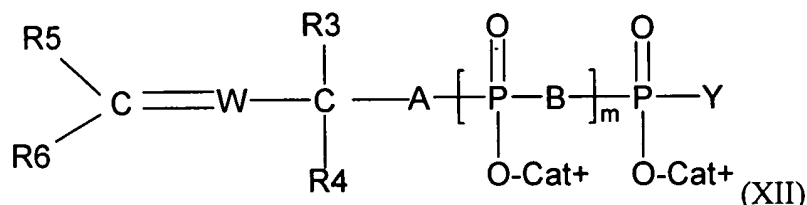
93 (new). The article of manufacture according to claim 90, where said $\gamma\delta$ T cell activator is a compound of formula (II):



in which X is an halogen (preferably selected from I, Br and Cl), B is O or NH, m is an integer from 1 to 3, R1 is a methyl or ethyl group, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), and n is an integer from 2 to 20, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

94 (new). The article of manufacture according to claim 93, wherein the compound of formula (II) is selected from the group consisting of BrHPP, CBrHPP and epoxPP.

95 (new). The article of manufacture according to claim 90, where said $\gamma\delta$ T cell activator is a compound of formula (XII):



in which R₃, R₄, and R₅, identical or different, are a hydrogen or (C₁-C₃)alkyl group, W is -CH- or -N-, R₆ is an (C₂-C₃)acyl, an aldehyde, an (C₁-C₃)alcohol, or an (C₂-C₃)ester, Cat⁺ represents one (or several, identical or different) organic or mineral cation(s) (including the proton), B is O or NH, m is an integer from 1 to 3, A is O, NH, CHF, CF₂ or CH₂, and Y is O⁻Cat⁺, or a nucleoside.

96 (new). The article of manufacture according to claim 95, wherein the compound of formula (XII) is HDMAPP or CHDMAPP.